March 11, 2021

BY ELECTRONIC FILING

Marlene H. Dortch
Secretary
Federal Communications Commission
45 L Street, N.E.
Washington, DC 20554

Re: *IBFS File No. SAT-MOD-20200417-00037*

Dear Ms. Dortch:

The Commission granted Space Exploration Holdings LLC ("SpaceX") a license on March 29, 2018 to operate 4,425 satellites at altitudes ranging from 1,110 to 1,325 kilometers. Then on April 26, 2018, the Commission approved SpaceX's request to modify its license to begin an upgrade of the system by operating 1,584 of those satellites at the safer altitude of 550 km. Viasat, Inc. ("Viasat") raised no objection. Then on April 17, 2020, SpaceX requested authorization to complete its upgrade by operating 2,824 of the originally approved satellites at altitudes between 540 km to 570 km. This time, Viasat objected on all manner of grounds, including its curious assertion that this particular modification request is subject to FCC NEPA review. Viasat's newfound interest in the altitude of SpaceX's satellites is transparently intended to slow down SpaceX's deployment of its constellation (and consequently its delivery of high-quality broadband to many otherwise unserved Americans); given Viasat's own application will increase the environmental risk of its system, it is clear that Viasat's claims against SpaceX are certainly not borne of any true concern for the environment.

Viasat's novel argument that the Commission should apply NEPA review to SpaceX's request to improve the safety profile of its system is flawed on many fronts.1 For one, even after multiple filings pushing its NEPA claim, Viasat has yet to establish that NEPA even applies in this context. For good reason: NEPA's statutory text and purpose show that Congress did not intend its application in space. NEPA refers only to the human "environment and biosphere," 42 USC § 4321; *see also Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 103 S. Ct. 1556 (1983) (in confirming NEPA's limits, quoting principal sponsors of NEPA as focused on "actions which do irreparable damage to the air, land and water which support life on earth" in order "to preserve and enhance our air, aquatic, and terrestrial environments.")

In addition to this threshold misapplication of the law, Viasat's arguments fail factually. Not only does SpaceX's modification request have no negative environmental effects, it actually

[1] *See* Petition Pursuant to Section 1.1307(c) of Viasat, Inc., IBFS File No. SAT-MOD-20200417-00037 (Dec. 22, 2020) ("Viasat Petition").

1155 F Street, NW Suite 475 Washington, DC 20004
phone 202.649.2700 fax 202.649.2701
spacex.com

reduces the constellation's impact. Specifically, as SpaceX has already demonstrated, the requested modification will result in maintaining or improving its operations against every metric Viasat cites in its Petition by:

- reducing the number of satellites SpaceX deploys;
- maintaining the number launches required to deploy the constellation;
- not affecting SpaceX's impressive and improving satellite success rate;[2]
- greatly reducing the collision risk of satellites on orbit, orbit raising, and de-orbiting;
- reducing the chances of orbital debris[3] (indeed SpaceX remains the only satellite operator to have proposed that the Commission adopt a rule preventing any persistent debris);[4]
- having no material effect on chemicals released in the atmosphere (while the modification will not change the total number of satellites that de-orbit, the few satellites that de-orbit passively will reach the atmosphere sooner at the lower altitudes that SpaceX proposes, but any impact of this tiny number of passively de-orbiting satellites reaching the atmosphere sooner would be de minimis in the context of total effluents released into the atmosphere each day. According to the EPA, the United States alone emitted 70 million tons of pollution into the atmosphere in 2019);
- having no effect on the risk to life on the ground; unlike Viasat, SpaceX has already demonstrated that its satellites have no calculated casualty risk (SpaceX is the only operator to have proposed that the Commission adopt a rule requiring zero calculated risk to life on the ground[5]);
- having no effect on aircraft, especially considering SpaceX's satellites, unlike Viasat's, were already designed to fully demise in the atmosphere even before this upgrade; and

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[2] *See* SpaceX Opposition to Petition for Reconsideration of Viasat, Inc., *In re Application of Space Exploration Holdings, LLC for Modification of Authorization for the SpaceX NGSO Satellite System*, IBFS File No. SAT-MOD-20200417-0037 (Feb. 23, 2021) at 4 ("SpaceX has demonstrated a much higher success rate that continues to improve as it nears zero failure rates. In fact, SpaceX's most recent data shows that, out of the last 723 satellites deployed, 720 have been maneuverable above insertion.").

[3] *See Ex Parte* Letter from Space Exploration Technologies Corp., IB Docket No. 18-313, IBFS File Nos. SAT-MPL-20200526, SAT-MOD-20200417-00037, filed March 2, 2021, at 2 (showing that "the per-satellite collision risk calculated by DAS decreases with each modification of the SpaceX constellation – and markedly so for the current proposal[.]").

[4] *See* Comments of Space Exploration Technologies Corp., *In the Matter of Mitigation of Orbital Debris in the New Space Age*, IB Docket No. 18-313, at 5 (April 5, 2019) (proposing that the government should establish a prohibition against operators generating "new persistent debris.").

[5] *See* Further Comments of Space Exploration Technologies Corp., *In the Matter of Mitigation of Orbital Debris in the New Space Age*, IB Docket No. 18-313, at 14 (Oct. 9. 2020) (proposing that the Commission "presumptively require zero calculated risk of human casualty.").

- improving visibility for optical astronomers and the general public.[6]

Viasat thus does not come close to overcoming the Commission's categorical exclusion for the application of NEPA here.[7] SpaceX's commitment to the space environment is clear. The company's core business as a launch services provider depends on the availability of orbits in which it operates, so SpaceX has a strong incentive not to take actions that would jeopardize these sacred responsibilities. As part of the Commission's proceeding addressing how to mitigate orbital debris, SpaceX proposed the strongest set of debris mitigation policies of any operator. In fact, SpaceX seeks its modification for this very reason, namely to reduce the environmental footprint of its satellite system.

For its part, it is telling that Viasat's newly minted interest in environmental protection remains focused on a single competitor, while ignoring other systems like the one proposed by Amazon that poses a far more serious risk to the environment. Viasat's supposed concern about the orbital environment is especially striking, given Viasat's own long history of fighting to exempt non-U.S. licensees like itself from orbital debris rules. Moreover, Viasat's own pending modification would increase the number of satellites in its proposed constellation fourteen-fold and operate them at a higher altitude where any failed satellites would remain for decades or centuries. But there should be no doubt that even if its petition to require NEPA review of SpaceX's modification were successful, Viasat would contend that its modified system, as a non-U.S. system, should not be subjected to any environmental review.

In contrast to Viasat's cynical behavior, SpaceX's proposed modification demonstrates a deep commitment and investment in maintaining a sustainable orbital environment. To ensure that SpaceX can continue to safely connect Americans, including otherwise unserved Americans, with high quality broadband, SpaceX urges the Commission to reject Viasat's misguided arguments and expeditiously grant the modification application.

Sincerely,

/s/ David Goldman

David Goldman
Director of Satellite Policy

SPACE EXPLORATION TECHNOLOGIES CORP.
1155 F Street, NW
Suite 475
Washington, DC 20004
Email: David.Goldman@spacex.com

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[6] *See Ex Parte* Letter from the American Astronomical Society, *In the Matter of Modification of Authorization for the SpaceX NGSO Satellite System*, IBFS File No. SAT-MOD-20200417-00037, filed January 7, 2021 (explaining that "SpaceX has made modifications to their Starlink satellites that have lowered the apparent brightness of their satellites," thus helping to reduce interference with ground-based optical astronomy).

[7] *See* 47 CFR § 1.1307(c).